GAS PHOTOTUBE
NON-DIRECTIONAL TYPE

Cathode
Photosurface
Window Area
Direct Interelectrode Capacitance
Maximum Overall Length
Maximum Seated Height
Maximum Diameter
Bulb (lime glass)
Base
Pin 1-No Connection
Pin 2-Anode (+)
Mounting Position

Cylindrical Mesh
S1
0.7 sq.in.
3.0 μuf
3-9/16"
2-15/16"
1-3/16"
T-9
Small 4-Pin

Any

BOTTOM VIEW

Maximum Ratings Are Absolute Values

MAXIMUM RATINGS and CHARACTERISTICS

Anode-Supply Voltage (D.C. or Peak A.C.) 90 max. volts
Anode Current* 15 max. μamp.
Ambient Temperature 100 max. °C
Luminous Sensitivity:* At 0 cycles 65 μamp./lumen
At 5000 cycles Less than 65 μamp./lumen
At 10000 cycles Less than 65 μamp./lumen
Sensitivity at 7500 Angstroms 0.0075 μamp./μwatt
Gas Amplification Factor Not over 10
D-C Resistance of Load:
With anode-supply voltage of 75 volts or less
For d-c currents above 3.5 μamp. 0.1 min. megohm
below 3.5 μamp. No Minimum
With anode-supply voltage of 90 volts
For d-c currents above 2 μamp. 4 min. megohms
below 2 μamp. 1 min. megohm

* On the basis of the use of a sensitive cathode area 1/2" in diameter,
* Subject to variations as explained on sheet PHOTOTUBE SENSITIVITY
  MEASUREMENTS in the front of this section.

Spectral Sensitivity Characteristic of S1 Photosurface
in lime-glass bulb is shown at beginning
of this section.

Mar. 20, 1943
**Gas Phototube**

**NON-DIRECTIONAL TYPE HAVING S-1 RESPONSE**

**DATA**

**General:**
- Spectral Response: S-1
- Wavelength of Maximum Response: 8000 ± 1000 angstroms
- Cathode:
  - Shape: Cylindrical Mesh
  - Minimum length: 13/16"
  - Minimum diameter: 5/8"
- Direct Interelectrode Capacitance (Approx.): 3 μf
- Maximum Overall Length: 3-9/16"
- Maximum Seated Length: 2-15/16"
- Seated Length to Center of Cathode: 1-31/32" ± 3/32"
- Maximum Diameter: 1-3/16"
- Operating Position: Any
- Weight (Approx.): 1 oz
- Bulb: T9
- Socket: Amphenol No. 77-M1P-4-T, or equivalent
- Base: Small-Shell Small 4-Pin (JEDEC No. A4-5)
- Basing Designation for BOTTOM VIEW: 2K

Pin 1 - No Connection
Pin 2 - Anode
Pin 3 - No Connection
Pin 4 - Photocathode

**Maximum Ratings, Absolute-maximum Values:**

<table>
<thead>
<tr>
<th></th>
<th>Rating 1</th>
<th>Rating 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ANODE-SUPPLY VOLTAGE</strong> (DC or Peak AC)</td>
<td>70 max.</td>
<td>90 max.</td>
</tr>
<tr>
<td><strong>AVERAGE CATHODE-CURRENT DENSITY</strong></td>
<td>60 max.</td>
<td>30 max.</td>
</tr>
<tr>
<td><strong>AVERAGE CATHODE CURRENT</strong></td>
<td>6 max.</td>
<td>3 max.</td>
</tr>
<tr>
<td><strong>AMBIENT TEMPERATURE.</strong></td>
<td>100 max.</td>
<td>100 max.</td>
</tr>
</tbody>
</table>

**Characteristics:**

With an anode-supply voltage of 90 volts unless otherwise specified

<table>
<thead>
<tr>
<th></th>
<th>Min.</th>
<th>Median</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiant, at 8000</td>
<td>-</td>
<td>0.0061</td>
<td></td>
</tr>
<tr>
<td>angstroms.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Luminous:*</td>
<td>40</td>
<td>65</td>
<td>100</td>
</tr>
<tr>
<td>At 0 cps.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At 5000 cps.</td>
<td>-</td>
<td>56</td>
<td>-</td>
</tr>
<tr>
<td>At 10000 cps.</td>
<td>-</td>
<td>50</td>
<td>-</td>
</tr>
<tr>
<td>Gas Amplification Factor:</td>
<td>-</td>
<td>-</td>
<td>10</td>
</tr>
<tr>
<td>Anode Dark Current at 25°C</td>
<td>-</td>
<td>-</td>
<td>0.1</td>
</tr>
</tbody>
</table>

*Indicates a change.
Minimum Circuit Values:

With an anode-supply voltage of 70 or less 90 volts

DC Load Resistance:

For dc currents above
3 μa. ............... 0.1 min. – megohm
For dc currents below
3 μa. ............... 0 min. – megohms
For dc currents above
2 μa. ............... – 2.5 min. megohms
For dc currents below
2 μa. ............... – 0.1 min. megohm

On plane perpendicular to indicated direction of incident radiation.
Averaged over any interval of 30 seconds maximum.
For conditions where the light source is a tungsten-filament lamp operated at a color temperature of 2870° K. A dc anode supply voltage of 90 volts and a 1-megohm load resistor are used. For the 0-cycle measurement, a light input of 0.1 lumen is used. For the 5000- and 10,000-cycle measurements, the light input is varied sinusoidally about a mean value of 0.015 lumen from zero to a maximum of twice the mean value.
The ratio of luminous sensitivity at an anode supply voltage of 90 volts to luminous sensitivity at an anode supply voltage of 25 volts. In each case, sensitivity is obtained under conditions where the light source is a tungsten-filament lamp operated at a color temperature of 2870° K. the light input is 0.1 lumen, and the load resistor has a value of 1 megohm.

SPECTRAL-SENSITIVITY CHARACTERISTIC OF PHOTORESISTIVE DEVICE HAVING S-1 RESPONSE

and

FREQUENCY-RESPONSE CHARACTERISTICS OF GAS PHOTOTUBES

are shown at the front of this section.
AVERAGE ANODE CHARACTERISTICS

Light source is a tungsten-filament lamp operated at color temperature of 2870° K.